

What is claimed is:

1 1. A method for fabricating a Fiber Bragg Grating
2 element, comprising:

3 (a) providing a mask having a predetermined pattern
4 and a wafer, wherein a light-guiding channel
5 filled with light-guiding substance is formed
6 on the wafer, and a photoresist layer is formed
7 on the wafer;

8 (b) adjusting the magnification of a
9 photolithography apparatus to a first Mag. and
10 transferring the predetermined pattern on the
11 mask to the photoresist layer on the wafer to
12 form a first pattern; and

13 (c) removing the light-guiding substance not covered
14 by the photoresist layer so that the first
15 pattern is transferred to the light-guiding
16 channel thus forming a Fiber Bragg Grating
17 element, which picks out the light of a
18 specific wavelength.

1 2. The method as claimed in claim 1, wherein the
2 mask comprises a glass substrate.

1 3. The method as claimed in claim 1, wherein the
2 predetermined pattern is made of Cr.

1 4. The method as claimed in claim 1, further
2 comprising:

3 (d) adjusting the magnification of the
4 photolithography apparatus to a second Mag. so

that the predetermined pattern is transferred to the photoresist layer to form a second pattern, wherein the second Mag. is not equal to the first Mag., and the first pattern and the second pattern are formed on the light-guiding channel without overlapping one another;

wherein the first pattern and the second pattern are simultaneously transferred in step (c) to the light-guiding channel on the wafer.

5. The method as claimed in claim 1, wherein the first Mag. is a positive integer or a non-positive integer.

6. A planar light circuit, formed on a wafer, comprising:

a light-guiding channel, formed on the surface of the wafer; and

a plurality of Fiber Bragg Grating elements formed in series in the light-guiding channel, and the Fiber Bragg Grating elements contain corresponding patterns similar to each other, but different in sizes.

7. The planar light circuit as claimed in claim 6, wherein the Fiber Bragg Grating elements corresponds to lights of a plurality of wavelengths, and the difference between one wavelength and adjacent wavelength is less than 10 nm.

1 8. The planar light circuit as claimed in claim 6,
2 wherein the Fiber Bragg Grating elements correspond to
3 lights of a plurality of wavelengths, and the difference
4 between one wavelength and adjacent wavelength is less
5 than the one of the bandwidths of the Fiber Bragg Grating
6 elements.

1 9. The planar light circuit as claimed in claim 6,
2 wherein the Fiber Bragg Grating elements combined as an
3 equivalent Fiber Bragg Grating element comprises an
4 equivalent notch wavelength and an equivalent bandwidth,
5 wherein the equivalent bandwidth is greater than any one
6 bandwidth of the Fiber Bragg Grating elements.